

# M M W R

## MORBIDITY AND MORTALITY WEEKLY REPORT

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### *Epidemiologic Notes and Reports*

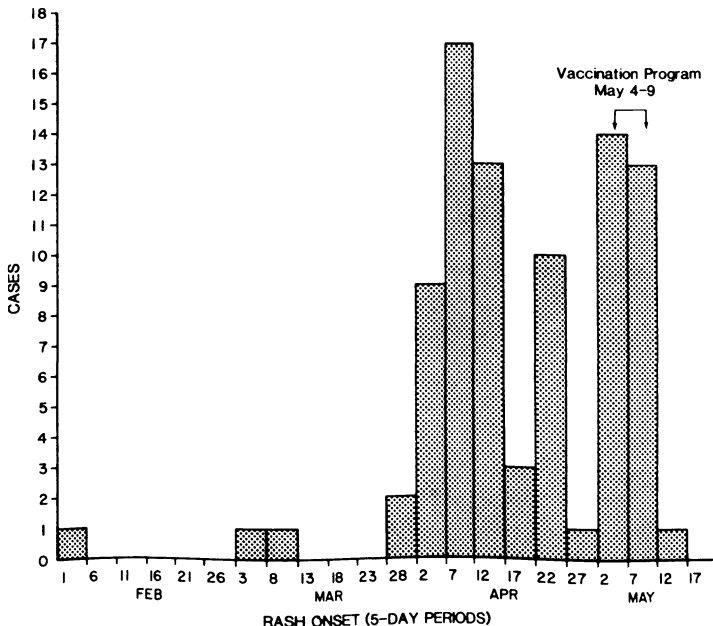
#### Rubella Outbreak among Office Workers — New York City

From February 2 through May 13, 1983, 86 cases of clinical rubella\* were reported among office workers employed at a major bank in lower Manhattan. All but three workers had onset of rash on or after March 28 (Figure 1). Fifteen (17.4%) of the cases were confirmed serologically.† The 86 employees ranged in age from 18 to 54 years. The source of the outbreak was not identified.

\*Case definition: Generalized maculopapular rash and at least one of the following: fever, conjunctivitis, coryza, joint pain, lymphadenopathy, or headache.

†Serologically confirmed by: 1) A four-fold or greater rise in titer of rubella hemagglutination-inhibition or complement-fixation antibody titer between acute- and convalescent-phase serum specimens; 2) a significant rise (in this investigation, a ratio 1.65:1 or greater) in ELISA rubella-specific IgG between acute- and convalescent-phase serum specimens; or 3) detectable (positive) ELISA rubella-specific IgM in a single serum specimen.

**FIGURE 1. Rubella cases among office workers, by date of rash onset — New York City, February 2-May 13, 1983**



*Rubella Outbreak — Continued*

Three serologically confirmed cases occurred in pregnant women; infection occurred at 14, 18, and 28 weeks' gestation. None of these women had a history of rubella vaccination. One woman subsequently delivered a full-term infant with congenital anomalies, but the cause of the anomalies is not certain. The other two pregnancies have not yet reached term.

Of the 86 patients, 72 (83.7%) worked in one of three affected office buildings; of these, 56 (77.8%) were women (Table 1). The attack rate was significantly higher for women (2.1%) than for men (0.8%) ( $p < 0.001$ ). Also, the risk of infection was significantly higher for women of childbearing age, under 45 years old (2.6%), than for women 45 years old or over (0.8%) ( $p < 0.02$ ). However, work location was the most important risk factor (Table 2). Of 72 ill persons in Building A, 40 worked in offices on the 11th-14th floors. Employees on these floors were 3.8 times more likely to have rubella than office workers on other floors ( $p < 0.001$ ). Women of childbearing age who worked on the 11th-14th floors, the group with the highest attack rate, were 4.8 times more likely to have rubella than women of childbearing age who worked on other floors ( $p < 0.001$ ).

When rubella was first suspected, employees were advised to report all rash illnesses to the employee-health unit. In addition, susceptible women of childbearing age were urged to be vaccinated unless pregnant, and pregnant women were advised to stay home until their immune status was known. After rubella infection was serologically confirmed, the Department of Health established an immunization clinic in the office building from May 4 to May 9. Of 6,409 employees working in the complex, 2,362 (36.9%) were vaccinated. Women of childbearing age were counseled regarding the theoretical risk to the fetus from vaccination and the importance of avoiding pregnancy for 3 months after vaccination. Before vaccination, serum specimens were collected from approximately 1,000 women of childbearing age. The sera were stored for antibody testing for any woman who might become pregnant within 3 months after vaccination. Also, a surveillance system was established to identify pregnancies or adverse events following vaccination. As of May 23, one pregnancy in a susceptible woman and adverse events for six persons were reported. The adverse events included lymphadenopathy (4 persons), joint pain (3), diarrhea (1), dizziness (1), and sore throat (1).

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**Editorial Note:** The 86 cases reported in this outbreak may underestimate the actual number of office workers who were infected. The major source of case reports, the employee-health unit, did not conduct active surveillance for cases. Many ill employees may have stayed home or obtained medical assistance near their homes, and their cases may not

**TABLE 1. Rubella attack rates, by age and sex — New York City, 1983**

GROUPS	ILL	TOTAL	ATTACK RATE (%)
<b>Men</b>			
15-44 years	15	1,592	0.9
≥ 45 years	1	346	0.3
Subtotal	16	1,938	0.8
<b>Women</b>			
15-44 years	50	1,949	2.6
≥ 45 years	6	707	0.8
Subtotal	56	2,656	2.1
<b>Total</b>	<b>72</b>	<b>4,594</b>	<b>1.6</b>

*Rubella Outbreak — Continued*

have been reported. In addition, as many as a third of the cases may have been subclinical and, therefore, not recognized.

The reasons for the significantly higher attack rates for women of childbearing age are not entirely clear. Such an age group may have greater susceptibility because it was missed by mass vaccination programs directed at schoolchildren in the 1970s. However, it is also possible that greater opportunity for exposure was a factor. On the 11th-14th floors, the area where the outbreak was concentrated, 50.2% of employees were women of childbearing age compared with 39.8% of employees in the other areas of the bank ( $p < 0.001$ ).

More than a third of all employees were vaccinated during the 3½-day vaccination clinic. This high rate of response was elicited by publicity within the bank and in the public news media. The daily attendance rate nearly doubled (from 668 to 1,180) when the employees were informed that "measles" vaccine received in the 1960s was not appropriate protection against rubella. As evidence of the success of the program, no cases occurred more than one incubation period (16 days) after the program began (Figure 1).

Although numerous rubella outbreaks have been reported among adults (1-4), only one previous outbreak among office workers has been reported (5). The current outbreak again demonstrates that rubella transmission can occur wherever susceptible adults congregate, and again shows the consequences of a rubella outbreak: infection of pregnant women, disruption of the work setting, and loss of working time by staff (6).

The potential for rubella outbreaks in workplaces where young adults congregate will continue as long as approximately 10%-20% are susceptible (7). Preventing such outbreaks requires that both male and female employees be immune. Two strategies can be used. First, all employees who lack documentation of prior rubella vaccination or antibody can be screened serologically, and only the susceptibles vaccinated. Second, all employees who lack documentation of prior rubella vaccination or antibody can be vaccinated without prior screening. The choice of method depends on the cost of serologic testing, the cost of vaccine, the time available, and the ability to locate and vaccinate susceptibles who are identified by screening (8). The Immunization Practices Advisory Committee (ACIP) has stated that rubella vaccine may be administered without prior serologic screening to men and to women who are not known to be pregnant (7).

If rubella and congenital rubella syndrome (CRS) are to be prevented, at least four approaches need to be taken. First, all schoolchildren in grades K-12 should be required to have evidence of immunity to rubella. Second, extensive efforts should be made to vaccinate women of childbearing age. These efforts should include, as part of employee-health

**TABLE 2. Rubella attack rates for building A — New York City, 1983**

GROUPS	ILL	TOTAL	ATTACK RATE (%)
<b>Floors 11-14</b>			
Women 15-44 years	33	583	5.7
All others	7	578	1.2
Subtotal	40	1,161	3.4
<b>Other floors</b>			
Women 15-44 years	17	1,366	1.2
All others	15	2,067	0.7
Subtotal	32	3,433	0.9
<b>Total</b>	<b>72</b>	<b>4,594</b>	<b>1.6</b>

*Rubella Outbreak — Continued*

programs, vaccination of employees of institutions or workplaces where women of childbearing age congregate or are employed. Third, documentation of rubella immunity should be mandatory for students entering colleges and universities. Finally, all hospital personnel who might have contact with patients infected with rubella or with pregnant patients should be immune to rubella.

*References*

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TABLE I. Summary—cases specified notifiable diseases, United States

Disease	27th Week Ending			Cumulative, 27th Week Ending		
	July 9, 1983	July 10, 1982	Median 1978-1982	July 9, 1983	July 10, 1982	Median 1978-1982
Aseptic meningitis	212	206	125	2,537	2,501	1,935
Encephalitis: Primary (arthropod-borne & unsp.)	21	32	21	454	492	354
Post-infectious	-	1	4	39	51	105
Gonorrhea: Civilian	14,898	15,393	18,105	450,481	482,337	490,017
Military	483	669	669	12,332	14,261	14,187
Hepatitis: Type A	284	431	459	11,301	11,536	14,007
Type B	380	380	313	11,470	10,845	8,751
Non A, Non B	69	46	N	1,719	1,179	N
Unspecified	111	140	147	4,028	4,364	5,159
Legionellosis	3	8	N	375	239	N
Leprosy	5	5	7	131	102	97
Malaria	17	34	34	353	506	506
Measles: Total	6	39	233	1,082	973	10,805
Indigenous	6	N	N	909	N	N
Imported*	-	N	N	173	N	N
Meningococcal infections: Total	43	48	37	1,727	1,852	1,640
Civilian	43	46	36	1,712	1,841	1,629
Military	-	2	-	15	11	11
Mumps	35	38	54	2,092	3,928	6,560
Pertussis	40	22	35	930	580	602
Rubella (German measles)	18	52	60	685	1,747	2,929
Syphilis (Primary & Secondary): Civilian	551	507	380	16,495	16,940	13,287
Military	6	2	5	224	202	165
Toxic-shock syndrome	2	N	N	224	N	N
Tuberculosis	361	475	467	11,774	12,996	13,797
Tularemia	7	6	4	127	95	88
Typhoid fever	5	14	13	175	205	232
Typhus fever, tick-borne (RMSF)	61	62	53	445	433	433
Rabies, animal	92	118	105	3,255	3,277	3,277

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1983		Cum. 1983
Anthrax	-	Plague (N.Mex. 1)	16
Botulism: Foodborne	12	Poliomyelitis: Total	2
Infant (Calif. 1)	35	Paralytic (Mo. 1)	2
Other	-	Psittacosis (N.Y. City 1, Wash. 1)	61
Brucellosis (Minn. 1, Tex. 7, Wash. 2)	93	Rabies, human	2
Cholera	-	Tetanus (Ohio 2, Fla. 1)	36
Congenital rubella syndrome	14	Trichinosis (Mass. 1, Ohio 1)	22
Diphtheria	-	Typhus fever, flea-borne (endemic, murine)	22
Leptospirosis (La. 1)	22		

\*None of the 6 reported cases for this week were imported from a foreign country or can be directly traceable to a known internationally imported case within two generations.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending  
July 9, 1983 and July 10, 1982 (27th week)

Reporting Area	Aseptic Menin- gitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionel- losis	Leptosy	Malaria
		Primary	Post-in- fectious			A	B	NA,NB	Unspeci- fied			
		1983	Cum. 1983	Cum. 1983	Cum. 1983	Cum. 1982	1983	1983	1983	1983	1983	Cum. 1983
UNITED STATES	212	454	39	450,481	482,337	284	380	69	111	3	131	353
NEW ENGLAND	3	18	-	11,413	11,503	4	16	3	13	-	3	17
Maine	-	-	-	587	538	-	1	1	-	-	-	-
N.H.	1	3	-	339	395	-	-	-	1	-	2	-
Vt.	-	1	-	211	228	-	3	-	1	-	-	1
Mass.	1	8	-	4,924	5,294	1	5	1	9	-	-	7
R.I.	-	-	-	615	789	-	-	-	-	-	-	3
Conn.	1	6	-	4,737	4,259	3	7	1	2	-	1	6
MID ATLANTIC	12	54	3	57,267	58,776	41	62	6	12	-	19	46
Upstate N.Y.	2	14	-	8,521	9,343	2	11	4	3	-	-	15
N.Y. City	-	7	-	23,438	24,628	19	4	-	7	-	18	13
N.J.	8	12	-	10,995	10,758	6	33	2	2	-	-	14
Pa.	2	21	3	14,313	14,047	14	14	-	-	-	1	4
E.N. CENTRAL	11	95	9	61,789	68,578	18	65	7	9	1	5	17
Ohio	3	38	6	16,668	18,583	7	24	2	1	-	1	3
Ind.	7	12	1	6,804	7,844	1	9	2	5	-	-	-
Ill.	-	-	-	15,850	19,956	5	3	2	1	-	2	3
Mich.	1	38	-	17,113	15,935	5	29	1	2	1	2	9
Wis.	-	7	2	5,354	6,260	-	-	-	-	-	-	2
W.N. CENTRAL	4	46	5	20,887	22,686	7	5	3	2	-	5	15
Minn.	-	18	1	2,999	3,437	-	1	2	-	-	4	5
Iowa	1	22	-	2,400	2,395	-	2	-	-	-	-	2
Mo.	-	2	-	10,039	10,546	3	1	-	2	-	-	2
N. Dak.	-	-	-	214	308	-	-	-	-	-	-	1
S. Dak.	2	-	2	593	616	4	-	-	-	-	-	-
Nebr.	-	3	-	1,245	1,393	-	1	-	-	-	-	1
Kans.	1	1	2	3,397	3,991	-	-	1	-	-	1	4
S. ATLANTIC	27	74	13	116,575	126,075	29	81	7	15	1	7	54
Del.	-	-	-	2,093	1,889	-	1	1	-	-	-	-
Md.	1	12	-	14,682	15,678	1	7	-	1	-	1	12
D.C.	-	-	-	7,883	6,733	-	-	-	-	-	-	7
Va.	3	20	2	10,049	10,617	5	18	1	7	1	-	6
W. Va.	-	2	-	1,225	1,385	-	-	-	2	-	-	1
N.C.	10	22	-	17,059	20,029	1	2	-	-	-	-	1
S.C.	-	2	-	10,986	12,092	5	15	1	1	-	-	5
Ga.	1	4	-	24,570	24,441	2	11	1	1	-	1	4
Fla.	12	12	11	28,028	33,211	15	27	3	3	-	5	18
E.S. CENTRAL	12	16	-	37,809	40,774	21	29	7	3	-	-	6
Ky.	3	-	-	4,440	5,516	13	8	2	3	-	-	-
Tenn.	-	3	-	15,478	15,963	5	13	4	-	-	-	-
Ala.	9	13	-	11,573	12,116	1	7	1	-	-	-	4
Miss.	-	-	-	6,318	7,179	2	1	-	-	-	-	2
W.S. CENTRAL	94	54	1	64,776	65,956	45	21	1	36	-	14	40
Ark.	-	5	-	4,891	5,521	1	2	-	3	-	-	1
La.	1	6	-	12,220	11,581	6	6	1	3	-	1	4
Okla.	23	11	1	7,588	7,336	13	5	-	5	-	-	8
Tex.	70	32	-	40,077	41,518	25	8	-	25	-	13	27
MOUNTAIN	12	29	3	13,867	16,596	34	20	11	6	-	12	18
Mont.	-	-	-	590	690	-	-	-	-	-	-	-
Idaho	-	-	-	615	773	-	-	-	-	-	-	2
Wyo.	-	2	-	364	484	-	-	-	-	-	-	1
Colo.	6	16	-	3,970	4,415	10	2	3	-	-	2	6
N. Mex.	-	1	-	1,654	2,071	4	1	-	-	-	-	5
Ariz.	6	2	3	3,832	4,614	18	10	8	5	-	9	3
Utah	-	8	-	686	763	2	2	-	1	-	1	1
Nev.	-	-	-	2,156	2,786	-	5	-	-	-	-	-
PACIFIC	37	68	5	66,098	71,393	85	81	24	15	1	66	140
Wash.	5	5	1	4,905	5,730	10	10	5	-	-	10	3
Oreg.	-	-	2	3,424	3,984	16	6	5	-	-	1	5
Calif.	23	59	2	54,709	58,651	53	60	12	15	1	35	132
Alaska	-	-	-	1,689	1,776	1	2	-	-	-	-	-
Hawaii	9	4	-	1,371	1,252	5	3	2	-	-	20	-
Guam	U	-	-	69	77	U	U	U	U	U	-	2
P.R.	3	-	1	1,480	1,579	6	7	-	1	-	-	1
V.I.	U	-	-	129	145	U	U	U	U	U	-	-
Pac. Trust Terr.	U	-	-	-	232	U	U	U	U	U	-	-

N: Not notifiable

U: Unavailable

TABLE III. (Cont'd). Cases of specified notifiable diseases, United States, weeks ending July 9, 1983 and July 10, 1982 (27th week)

Reporting Area	Measles (Rubeola)					Men- gococcal infections	Mumps			Pertussis			Rubella			
	Indigenous		Imported*		Total		Cum. 1983	1983	Cum. 1983	Cum. 1982	1983	Cum. 1983	Cum. 1982	1983	Cum. 1983	Cum. 1982
	1983	Cum. 1983	1983	Cum. 1983												
UNITED STATES	6	909	-	173	973	1,727	35	2,092	3,928	40	930	580	18	685	1,747	
NEW ENGLAND	-	2	-	10	10	85	1	81	145	5	36	30	-	9	11	
Maine	-	-	-	-	-	8	-	15	33	1	4	3	-	-	-	
N.H.	-	-	-	-	-	2	-	16	13	-	5	4	-	2	8	
Vt.	-	-	-	-	-	6	-	10	5	3	7	1	-	3	-	
Mass.	-	2	-	2	2	28	-	19	67	-	16	10	-	4	-	
R.I.	-	-	-	-	-	7	1	10	14	1	4	10	-	-	1	
Conn.	-	-	-	8	4	34	-	11	13	-	-	2	-	-	2	
MID ATLANTIC	1	57	-	20	144	292	5	163	243	4	242	94	2	124	85	
Upstate N.Y.	-	-	-	6	100	93	1	62	51	2	77	55	1	21	40	
N.Y. City	1	31	-	10	36	51	2	23	38	2	35	19	1	86	31	
N.J.	-	26	-	1	4	50	1	29	36	-	15	11	-	3	14	
Pa.	-	-	-	3	4	98	1	49	118	-	115	9	-	14	-	
E.N. CENTRAL	-	535	-	51	65	307	13	1,057	2,180	6	198	156	2	96	157	
Ohio	-	66	-	13	1	102	3	527	1,536	1	71	37	-	1	-	
Ind.	-	372	-	-	2	34	1	26	33	4	20	11	2	22	26	
Ill.	-	97	-	33	23	85	-	116	239	-	83	74	-	42	58	
Mich.	-	-	-	5	39	60	9	333	280	1	12	8	-	14	42	
Wis.	-	-	-	-	-	26	-	55	92	-	12	26	-	17	31	
W.N. CENTRAL	-	-	-	-	39	101	2	129	517	2	61	29	-	30	55	
Minn.	-	-	-	-	-	16	2	22	401	2	22	11	-	6	5	
Iowa	-	-	-	-	-	11	-	35	29	-	5	3	-	-	-	
Mo.	-	-	-	2	2	51	-	20	8	-	9	8	-	-	38	
N. Dak.	-	-	-	-	-	2	-	-	-	-	1	-	-	-	-	
S. Dak.	-	-	-	-	-	4	-	-	1	-	3	3	-	-	1	
Nebr.	-	-	-	-	-	1	-	2	-	-	-	1	-	-	-	
Kans.	-	-	-	-	37	16	-	50	78	-	21	3	-	24	11	
S. ATLANTIC	-	153	-	24	33	355	6	134	217	5	125	83	9	83	63	
Del.	-	-	-	-	-	-	2	7	10	-	2	4	-	-	1	
Md.	-	1	-	4	2	37	-	22	21	-	8	11	-	1	33	
D.C.	-	-	-	-	1	4	-	-	-	-	-	1	-	-	-	
Va.	-	10	-	12	14	52	2	25	30	1	42	12	1	2	11	
W. Va.	-	-	-	-	2	3	-	28	80	-	4	4	-	-	1	
N.C.	-	-	-	-	-	77	-	5	10	-	12	10	-	9	1	
S.C.	-	-	-	4	-	38	-	7	13	3	11	12	1	1	1	
Ga.	-	8	-	-	-	56	2	40	11	-	27	10	-	11	5	
Fla.	-	134	-	4	14	88	-	-	42	1	19	19	7	59	10	
E.S. CENTRAL	-	1	-	5	7	106	1	38	32	1	8	22	-	10	39	
Ky.	-	-	-	1	1	20	-	15	9	1	3	4	-	9	22	
Tenn.	-	-	-	-	6	40	1	19	13	-	2	8	-	-	1	
Ala.	-	1	-	4	-	31	-	1	5	-	1	1	-	1	-	
Miss.	-	-	-	-	-	15	-	3	5	-	2	9	-	-	16	
W.S. CENTRAL	-	34	-	37	12	194	2	146	140	8	130	38	1	95	81	
Ark.	-	-	-	11	-	15	-	2	6	1	6	2	-	-	1	
La.	-	-	-	25	2	41	-	-	3	-	2	6	-	9	1	
Okla.	-	1	-	-	-	23	-	-	-	-	6	90	3	-	3	
Tex.	-	33	-	1	10	115	2	144	131	1	32	27	1	86	76	
MOUNTAIN	-	1	-	3	6	64	-	85	64	9	88	39	2	26	57	
Mont.	-	-	-	-	-	6	-	2	3	-	1	-	1	4	4	
Idaho	-	-	-	-	-	5	-	5	3	1	3	6	-	8	6	
Wyo.	-	-	-	1	1	1	-	-	2	-	4	1	1	2	5	
Colo.	-	-	-	2	5	25	-	10	13	8	60	11	-	-	5	
N. Mex.	-	-	-	-	-	5	-	-	-	-	5	4	-	-	5	
Ariz.	-	-	-	1	-	13	-	59	27	-	9	16	-	6	7	
Utah	-	-	-	-	-	8	-	6	12	-	6	1	-	5	16	
Nev.	-	1	-	-	-	1	-	3	4	-	-	-	-	1	9	
PACIFIC	5	126	-	23	657	223	5	259	390	-	42	89	2	212	1,199	
Wash.	-	1	-	3	36	31	-	38	60	-	6	16	1	8	32	
Oreg.	-	5	-	2	5	33	-	-	-	-	6	20	-	12	5	
Calif.	5	119	-	18	612	153	5	198	317	-	30	53	1	192	1,154	
Alaska	-	-	-	-	1	-	-	10	6	-	-	-	-	-	1	
Hawaii	-	1	-	-	3	6	-	13	7	-	-	-	-	-	7	
Guam	U	1	U	1	6	1	U	-	3	U	-	-	U	-	2	
P.R.	-	82	-	-	78	11	-	102	47	-	7	13	-	3	7	
V.I.	U	-	U	5	-	-	U	-	-	U	-	-	U	1	-	
Pac. Trust Terr.	U	-	U	-	-	-	U	-	3	U	-	-	U	-	-	

\*For measles only, imported cases includes both out-of-state and international importations.

U: Unavailable

†International

§Out-of-state

TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending July 9, 1983 and July 10, 1982 (27th week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic- shock Syndrome	Tuberculosis		Tula- remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1983	Cum. 1982	1983	1983	Cum. 1983	Cum. 1983	Cum. 1983	Cum. 1983	Cum. 1983
UNITED STATES	16,495	16,940	2	361	11,774	127	175	445	3,255
NEW ENGLAND	369	279	-	10	323	-	6	2	9
Maine	10	1	-	-	19	-	-	-	2
N.H.	12	2	-	-	23	-	-	-	2
Vt.	2	1	-	-	7	-	-	-	-
Mass.	227	195	-	5	172	-	6	2	2
R.I.	13	14	-	3	24	-	-	-	-
Conn.	105	66	-	2	78	-	-	-	3
MID ATLANTIC	2,047	2,319	-	42	2,099	-	32	10	109
Upstate N.Y.	108	265	-	7	349	-	6	-	39
N.Y. City	1,251	1,383	-	25	852	-	14	1	-
N.J.	408	297	-	10	440	-	10	5	3
Pa.	280	374	-	-	458	-	2	4	67
E.N. CENTRAL	786	1,068	1	43	1,538	2	30	38	275
Ohio	240	150	-	13	243	-	6	29	33
Ind.	73	104	-	-	139	-	1	-	20
Ill.	319	603	-	30	688	1	14	6	148
Mich.	113	154	1	-	391	1	9	3	3
Wis.	41	57	-	-	77	-	-	-	71
W.N. CENTRAL	203	313	-	12	375	37	12	25	489
Minn.	85	59	-	-	77	-	2	-	94
Iowa	9	17	-	-	31	-	-	-	128
Mo.	70	190	-	9	196	29	5	15	61
N. Dak.	1	4	-	-	3	-	-	1	45
S. Dak.	9	-	-	3	28	1	-	2	70
Nebr.	11	8	-	-	11	3	-	-	43
Kans.	18	35	-	-	29	4	5	7	48
S. ATLANTIC	4,354	4,563	1	124	2,387	13	22	176	1,125
Del.	19	9	-	1	23	-	-	2	1
Md.	273	253	-	24	209	5	4	24	465
D.C.	186	263	-	2	86	-	-	-	1
Va.	307	337	1	16	230	1	5	27	412
W. Va.	13	17	-	-	75	-	2	8	80
N.C.	404	309	-	6	325	6	1	55	10
S.C.	274	238	-	31	221	-	1	25	16
Ga.	822	937	-	25	451	1	1	32	122
Fla.	2,056	2,200	-	19	767	-	8	3	18
E.S. CENTRAL	1,142	1,172	-	11	1,085	9	3	25	244
Ky.	67	63	-	-	274	-	1	2	55
Tenn.	318	312	-	-	324	7	1	18	155
Ala.	471	426	-	6	276	-	-	3	34
Miss.	286	371	-	5	211	2	1	2	-
W.S. CENTRAL	4,432	4,350	-	48	1,401	58	16	165	684
Ark.	103	110	-	4	156	40	1	15	115
La.	986	934	-	-	208	2	3	-	19
Okla.	115	91	-	-	126	14	-	106	73
Tex.	3,228	3,215	-	44	911	2	12	44	477
MOUNTAIN	363	425	-	15	323	5	7	3	106
Mont.	5	3	-	-	34	2	1	1	66
Idaho	6	19	-	3	16	1	-	1	-
Wyo.	7	10	-	1	8	-	-	1	3
Colo.	86	118	-	-	31	-	1	-	6
N. Mex.	110	89	-	8	69	1	-	-	5
Ariz.	88	99	-	3	133	1	3	-	25
Utah	12	13	-	-	22	-	1	-	1
Nev.	49	74	-	-	10	-	1	-	-
PACIFIC	2,799	2,451	-	56	2,243	3	47	1	214
Wash.	95	84	-	7	114	2	2	-	2
Oreg.	58	63	-	1	95	-	2	-	-
Calif.	2,604	2,230	-	44	1,874	1	41	1	197
Alaska	7	8	-	-	25	-	-	-	15
Hawaii	35	66	-	4	135	-	2	-	-
Guam	-	1	U	U	2	-	-	-	-
P.R.	400	332	U	U	254	-	-	-	29
V.I.	9	13	U	U	1	-	-	-	-
Pac. Trust Terr.	-	-	U	U	-	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,\* week ending  
July 9, 1983 (27th week)

Reporting Area	All Causes, By Age (Years)						P&I** Total	Reporting Area	All Causes, By Age (Years)						P&I** Total	
	All Ages	≥65	45-64	25-44	1-24	<1			All Ages	≥65	45-64	25-44	1-24	<1		
NEW ENGLAND	614	417	139	24	13	21	39	S. ATLANTIC	1,029	608	281	75	38	27	33	
Boston, Mass.	181	108	49	9	4	11	15	Atlanta, Ga.	92	57	23	9	-	3	4	
Bridgport, Conn.	47	32	11	4	-	-	2	Baltimore, Md.	254	149	71	21	11	2	3	
Cambridge, Mass.	31	28	3	-	-	-	2	Charlotte, N.C.	48	29	14	1	3	1	3	
Fall River, Mass.	27	18	9	-	-	-	-	Jacksonville, Fla.	82	47	19	10	3	3	2	
Hartford, Conn.	56	38	11	3	1	3	2	Miami, Fla.	73	40	23	3	4	3	-	
Lowell, Mass.	16	13	2	-	1	-	-	Norfolk, Va.	53	30	14	4	2	3	3	
Lynn, Mass.	12	10	2	-	-	-	-	Richmond, Va.	45	32	9	3	-	3	3	
New Bedford, Mass.	23	19	2	2	-	-	1	Savannah, Ga.	48	28	13	4	3	1	4	
New Haven, Conn.	21	13	4	2	1	1	-	St. Petersburg, Fla.	78	58	16	2	1	1	4	
Providence, R.I.	62	40	18	-	1	3	3	Tampa, Fla.	55	35	9	3	1	1	1	
Somerville, Mass.	9	8	-	1	-	-	2	Washington, D.C.	139	68	50	13	6	2	2	
Springfield, Mass.	25	15	6	-	1	3	2	Wilmington, Del.	62	35	20	2	4	1	6	
Waterbury, Conn.	34	22	7	2	3	-	2									
Worcester, Mass.	70	53	15	1	1	-	8									
								E.S. CENTRAL	646	411	162	33	24	16	31	
MID. ATLANTIC	2,218	1,467	481	156	65	49	76	Birmingham, Ala.	95	63	21	4	7	-	-	
Albany, N.Y.	50	36	11	1	1	1	1	Chattanooga, Tenn.	47	27	11	5	2	2	4	
Allentown, Pa.	24	15	5	3	1	-	-	Knoxville, Tenn.	41	28	10	1	1	1	-	
Buffalo, N.Y.	129	82	31	5	4	7	6	Louisville, Ky.	112	69	32	4	6	1	10	
Camden, N.J.	24	17	7	-	-	-	-	Memphis, Tenn.	154	107	38	7	2	-	6	
Elizabeth, N.J.	29	22	4	2	1	-	-	Mobile, Ala.	56	33	15	4	-	4	2	
Erie, Pa.†	43	33	7	1	1	1	5	Montgomery, Ala.	54	32	13	3	5	1	4	
Jersey City, N.J.	42	25	14	2	1	-	-	Nashville, Tenn.	87	52	22	5	1	7	5	
N.Y. City, N.Y.	1,246	818	264	101	41	22	34									
Newark, N.J.	33	15	9	2	3	4	2	W.S. CENTRAL	1,175	674	278	109	65	49	42	
Paterson, N.J.	30	18	6	2	-	4	5	Austin, Tex.	63	42	9	7	3	2	2	
Philadelphia, Pa.†	103	60	26	15	1	1	4	Baton Rouge, La.	41	21	14	4	-	2	3	
Pittsburgh, Pa.†	68	42	19	4	2	1	-	Corpus Christi, Tex.	34	20	6	5	2	1	3	
Reading, Pa.	32	26	4	-	2	-	1	Dallas, Tex.	145	84	31	15	9	6	2	
Rochester, N.Y.	130	87	29	8	4	2	11	El Paso, Tex.	34	18	8	3	4	1	-	
Schenectady, N.Y.	18	14	4	-	-	-	1	Fort Worth, Tex.	77	39	22	8	6	2	1	
Scranton, Pa.†	31	24	6	1	-	-	1	Houston, Tex.	351	191	88	35	24	13	14	
Syracuse, N.Y.	103	77	14	5	2	5	2	Little Rock, Ark.	57	33	10	6	3	5	3	
Trenton, N.J.	30	17	11	2	-	-	1	New Orleans, La.	134	87	29	8	4	6	2	
Utica, N.Y.	26	19	7	-	-	-	1	San Antonio, Tex.	122	62	40	12	5	3	6	
Yonkers, N.Y.	27	20	3	2	1	1	1	Shreveport, La.	44	32	7	2	1	2	2	
								Tulsa, Okla.	73	45	14	4	4	6	4	
E.N. CENTRAL	2,095	1,326	518	130	59	61	53	MOUNTAIN	556	350	134	36	20	14	23	
Akron, Ohio	63	43	12	3	-	5	-	Albuquerque, N.Mex.	58	41	10	2	4	1	-	
Canton, Ohio	37	23	8	5	-	1	-	Colo. Springs, Colo.	35	21	10	2	2	-	3	
Chicago, Ill.	532	338	134	38	11	11	15	Denver, Colo.	100	58	28	9	5	-	2	
Cincinnati, Ohio	133	91	27	6	2	7	11	Las Vegas, Nev.	62	31	22	5	4	-	3	
Cleveland, Ohio	148	84	46	6	9	3	3	Ogden, Utah	21	12	7	-	-	-	2	
Columbus, Ohio	85	48	27	5	3	2	1	Phoenix, Ariz.	118	80	23	10	-	5	2	
Dayton, Ohio	108	65	31	7	3	2	5	Pueblo, Colo.	18	14	2	-	1	1	-	
Detroit, Mich.	219	132	54	21	8	3	3	Salt Lake City, Utah	49	35	9	3	1	1	3	
Evansville, Ind.	31	23	7	-	-	1	1	Tucson, Ariz.	95	58	23	5	3	6	8	
Fort Wayne, Ind.	36	24	9	1	2	-	-									
Gary, Ind.	10	4	6	-	-	-	-	PACIFIC	1,437	934	316	89	54	43	68	
Grand Rapids, Mich.	67	50	10	3	1	3	4	Berkeley, Calif.	17	12	3	1	1	-	-	
Indianapolis, Ind.	154	89	40	9	7	9	1	Fresno, Calif.	62	40	15	1	4	2	3	
Madison, Wis.	24	14	5	4	1	-	-	Glendale, Calif.	16	11	3	1	1	-	1	
Milwaukee, Wis.	132	87	32	5	3	5	4	Honolulu, Hawaii	57	42	10	3	1	1	2	
Peoria, Ill.	39	25	8	1	3	2	2	Long Beach, Calif.	78	50	18	5	2	3	1	
Rockford, Ill.	44	29	7	4	2	2	1	Los Angeles, Calif.	341	216	84	21	12	7	13	
South Bend, Ind.	27	20	4	2	1	-	-	Oakland, Calif.	65	43	13	7	1	1	1	
Toledo, Ohio	119	81	28	7	-	3	2	Pasadena, Calif.	26	19	5	-	1	1	-	
Youngstown, Ohio	87	56	23	3	3	2	-	Portland, Oreg.	97	62	22	8	3	2	2	
								Sacramento, Calif.	56	35	10	5	3	3	2	
W.N. CENTRAL	628	408	130	34	24	29	22	San Diego, Calif.	132	80	29	9	7	7	13	
Des Moines, Iowa	46	30	9	3	2	1	4	San Francisco, Calif.	109	69	25	10	2	3	3	
Duluth, Minn.	24	18	4	-	-	2	-	San Jose, Calif.	161	112	31	5	6	7	14	
Kansas City, Kans.	19	12	4	-	-	1	1	Seattle, Wash.	119	78	27	7	5	2	4	
Kansas City, Mo.	107	74	19	4	5	3	7	Spokane, Wash.	54	31	11	5	5	2	6	
Lincoln, Nebr.	26	18	4	1	1	2	1	Tacoma, Wash.	47	34	10	1	-	2	3	
Minneapolis, Minn.	71	46	13	5	3	4	1									
Omaha, Nebr.	59	36	13	1	4	5	1	TOTAL	10,398 <sup>††</sup>	6,595	2,439	686	362	309	387	
St. Louis, Mo.	149	84	39	11	5	10	6									
St. Paul, Minn.	52	41	8	2	1	-	-									
Wichita, Kans.	75	49	17	7	1	1	1									

\* Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

\*\* Pneumonia and influenza

† Because of changes in reporting methods in these 4 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

†† Total includes unknown ages.



## Cholera in a Tourist Returning from Cancún, Mexico — New Jersey

A 31-year-old woman had onset of a diarrheal illness on June 15, 1983, 4 days after arriving in Cancún, an island on the coast of the Yucatan Peninsula of Mexico. She returned to the United States on June 18 and, on the same day, had onset of chills, fever, and myalgia. The next day her temperature rose to 39.4 C (103 F), and she had onset of nausea and vomiting. On June 21, she was admitted to a New Jersey hospital because of persistent diarrhea, fever, myalgia, and dehydration; she had lost 10 pounds. On the day after admission, she had onset of sore throat, cough, and laryngitis. The dehydration was treated with intravenous fluids, and she recovered and was discharged on June 30. Hemolytic *Vibrio cholerae* O-group 1, biotype El Tor, serotype Inaba was isolated from her stool. The organism was toxigenic in a Y-1 adrenal cell assay and in an enzyme-linked immunosorbent assay for cholera toxin. The patient reported having eaten a variety of foods, including incompletely cooked seafood and raw vegetables, but the source of her infection is unknown.

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**Editorial Note:** Toxigenic *V. cholerae* O1 causes cholera. The patient's respiratory symptoms and high fever are not typical of cholera and were probably caused by a concurrent infection.

This is the first case of cholera apparently acquired in a Western Hemisphere country other than the United States since before 1900. Thirty toxigenic *V. cholerae* O1 infections (excluding laboratory-associated cases) acquired in the United States were identified between 1973 and 1981; all 30 resulted from exposures in Louisiana and Texas near the coast of the Gulf of Mexico (1-3). Isolates from cases acquired in the United States were hemolytic and of the same biotype and serotype as the isolate from the present case; phage typing and molecular genetic analysis will be done to determine if the strains are identical.

The risk to tourists traveling to Cancun should be very slight, since, despite extensive travel by Americans to areas with endemic cholera (such as India, Indonesia, Thailand, and the Philippines), only 10 cases of cholera in U.S. travelers were reported during the first 20 years of the cholera pandemic that began in 1961 (4). There is no evidence of any other cholera cases in Mexico. An investigation is in progress, and a surveillance system for *V. cholerae* O1 and other vibrios is being established. Persons visiting Cancun need not take any unusual precautions, but should follow the usual recommendations to travelers to prevent diarrheal disease (5): 1) Drink boiled or chemically treated water, canned or bottled carbonated beverages (including carbonated bottled water and soft drinks); beer and wine should also be safe, 2) Avoid raw or incompletely cooked seafood, and eat only foods that have been cooked well and are still hot and fruits that have been peeled by the traveler. Cholera vaccine is not recommended. Physicians and laboratories should be aware that use of a special culture medium, such as thiosulfate citrate bile salts sucrose agar, will greatly enhance detection of *Vibrio* species in stools.

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## An Evaluation of the Acquired Immunodeficiency Syndrome (AIDS) Reported in Health-Care Personnel — United States

As of July 11, 1983, physicians and health departments in the United States and Puerto Rico had reported a total of 1,831 patients meeting the CDC surveillance definition of the acquired immunodeficiency syndrome (AIDS) (1). Of these, four were reported to be health-care personnel not known to belong to groups at increased risk for AIDS. Onset of illness in these patients occurred between June 1981 and April 1983. The source of AIDS in these four patients is unclear, and none had documented contact with another AIDS patient. Additional cases have been reported in health-care personnel; however, these have either occurred in persons belonging to AIDS risk groups or in persons for whom information is insufficient to determine if they belong to such groups. The case histories for the four patients follow.

**Patient 1:** A 32-year-old black man living in Baltimore, Maryland, was in good health until January 1983, when he complained of lower abdominal discomfort, relieved by urination, and blood in his stools. Medical evaluation, which included a renal sonogram and an abdominal CAT scan, revealed no cause for his complaints, and his symptoms subsided without treatment. At the same time, he began to lose weight. On May 13, he presented to his private physician with complaints of fever and cough of 2-3 days' duration. His temperature was 37.8 C (100 F). Chest x-ray showed a questionable right upper lobe infiltrate, and he was given oral erythromycin.

On May 21, 1983, the patient went to a Baltimore hospital, where he was found to have bilateral pulmonary infiltrates. He was hospitalized and sulfamethoxazole/trimethoprim was added to his therapy. On May 24, a transbronchial lung biopsy showed *Pneumocystis carinii* pneumonia (PCP); results of immunologic studies were consistent with AIDS. Despite the addition of pentamidine isethionate to his therapy, his condition worsened, and he died on June 2. At autopsy, no evidence of malignancy was found.

The patient had worked for the housekeeping department of a hospital since 1968. Beginning in August 1981, he worked exclusively in the ambulatory surgery area, where his duties included removal of surgical drapes and disposable surgical equipment, which were often contaminated with blood. Reportedly, he usually did not wear gloves.

On February 26, 1982, the patient went to the employee-health nurse for treatment of a needlestick injury. The patient stated that, while disposing of a cardboard box containing used needles, he had been stuck on the hand by a needle protruding from the box. Blood samples were drawn for hepatitis B virus serologic tests, and a single 2-ml dose of immune globulin (IG) was given intramuscularly. (IG therapy has not been reported in other AIDS patients not belonging to known risk groups.) The serologic tests were positive for antibody to hepatitis B surface antigen but negative for the antigen. No other injuries had been recorded on his employee-health record.

When interviewed by his physicians, the patient denied homosexual activity, intravenous (IV) drug use, foreign travel, or transfusion. After the patient's death, interviews by the Baltimore City Health Department of his family and friends confirmed his history. Four of his female sexual partners were interviewed, and all denied IV drug use; none had a history compatible with AIDS. The patient had no history of treatment for venereal diseases, and serologic tests for syphilis (RPR, MHA-TP, FTA-Abs), done during his hospitalization for PCP, were negative.

No patient meeting the CDC surveillance definition of AIDS was reported to have been seen at the hospital where patient 1 worked. In June 1982, 4 months after the needlestick injury and 7 months before patient 1 became ill, a homosexual man with a history of chronic,

**AIDS — Continued**

unexplained lymphadenopathy underwent a lymph node biopsy in the ambulatory surgery area of the hospital. Although patient 1 was working in this area on the day of the biopsy, the extent of his contact, if any, with the lymphadenopathy patient or materials used in the biopsy procedure is unknown.

**Patients 2-4:** Less epidemiologic information is available for patients 2-4 than for patient 1. They appear either more likely to have belonged to AIDS risk groups or less likely to have had exposure to blood than patient 1. All had immunologic studies consistent with AIDS.

**Patient 2,** a 32-year-old American Indian woman, was living in New Jersey when she became ill in 1981. She was found to have PCP, recovered following treatment, but died of cerebral toxoplasmosis in 1982. She had worked in a hospital laundry since 1980. During her employment, a patient with possible AIDS had been admitted to the hospital where she worked, but she had no direct contact with this person. Although she used marijuana, cocaine, and mescaline, she denied IV drug use. She also denied foreign travel, receipt of blood, and sexual contact with men who were bisexual or IV drug users. (This patient has been previously reported elsewhere [2].)

**Patient 3,** a 34-year-old Jamaica-born man, was living in Miami, Florida, when he became ill in 1982. He was found to have PCP and recovered following treatment. He had come to the United States in 1979 and had worked as a private-duty nurse in Miami since then. He denied contact with AIDS patients; a subsequent review of his work assignments showed that he had not cared for any patients reported to have AIDS. He did not recall ever having a needle-stick injury. He also denied homosexual activity, IV drug use, and receipt of blood. One of his female sexual partners was interviewed. She was in good health and denied IV drug use. Another of his female partners could not be located.

**Patient 4,** a middle-aged man, was living in New York City when he became ill in 1983. He was found to have PCP and recovered following treatment. He worked as a nurse's aide in the outpatient department of a hospital. AIDS patients had been seen at this hospital, but he apparently had not cared for any of them. In the past, he had had needlestick injuries and had received bites from patients, but could recall no such injuries for more than 2 years. Although he admitted to a homosexual encounter as an adolescent, he denied homosexual activity as an adult. He also denied IV drug use and receipt of blood and had no foreign travel since 1976. His serologic tests for syphilis (FTA-ABS) and hepatitis B virus (antibody to hepatitis B core antigen) were positive.

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**Editorial Note:** Although the etiology of AIDS remains unknown, epidemiologic evidence suggests that AIDS is caused by an infectious agent transmitted sexually or, less commonly, through exposure to blood or blood products. The disease has not been shown to be transmitted through casual contact with affected individuals.

Continuing surveillance of AIDS confirms earlier observations that 94% of patients come from the high risk groups previously described (3). The source of AIDS in the patients reported here is unknown. They denied belonging to known AIDS risk groups; however, the accuracy of data concerning sexual activity and IV drug use cannot be verified. None gave a history

*AIDS — Continued*

of caring for an AIDS patient, and none had known contact with blood of an AIDS patient; however, the possibility that these patients had forgotten or unknown exposure to the blood of AIDS patients cannot be entirely excluded.

These four cases provide no new information regarding occupational risk related to health-care personnel. Transmission of AIDS within hospitals has not been reported. Recommendations for prevention of AIDS in health-care personnel have been previously published (4), and these personnel are urged to become familiar with and adhere to these recommendations.

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The *Morbidity and Mortality Weekly Report* is prepared by the Centers for Disease Control, Atlanta, Georgia, and available on a paid subscription basis from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, (202) 783-3238.

The data in this report are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday.

The editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. Such reports and any other matters pertaining to editorial or other textual considerations should be addressed to: ATTN: Editor, *Morbidity and Mortality Weekly Report*, Centers for Disease Control, Atlanta, Georgia 30333.

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